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**CLAIMS**

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[Claim(s)]

[Claim 1] The cosmetics instrument characterized by having the ultrasonic vibrator drive which makes two or more pads fixed to the supporter material and said supporter material of the shape of a belt with which it can equip, two or more ultrasonic vibrators respectively arranged in the interior of said two or more pads, and said two or more ultrasonic vibrators vibrate in order to the body.

[Claim 2] The cosmetics instrument further equipped with the input section connected to said control section for changing the control section for changing the oscillating reinforcement of the supersonic vibration by said ultrasonic vibrator in the shape of a wave, and the period and amplitude in a wave of this oscillating reinforcement in a cosmetics instrument according to claim 1.

[Claim 3] claim 1 or claim 2 -- the cosmetics instrument further equipped with the low frequency feeder style which supplies low frequency to either in order to said two or more pads in the cosmetics instrument of a publication.

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## DETAILED DESCRIPTION

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### [Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the cosmetics instrument which makes the cosmetics effectiveness do so by giving supersonic vibration to the skin.

[0002]

[Description of the Prior Art] What was equipped with the metal pad and the ultrasonic radiator which gives supersonic vibration to this pad as such a cosmetics instrument is known. And in this cosmetics instrument, by sliding a pad to the front face of the skin, the supersonic wave oscillated from an ultrasonic radiator is transmitted to the skin through a pad, and it is constituted by the metabolism promotion operation by the massage effectiveness, the deep part heat effect by the warm temperature energy effectiveness, etc. so that the cosmetics effectiveness may be made to do so.

[0003] Moreover, in order to perform the massage to the body automatically and efficiently in the cosmetics instrument using such a supersonic wave, Two or more pads which contained the ultrasonic vibrator in the supporter material of the shape of a belt with which it can equip respectively in the interior to the body are fixed. By making each ultrasonic vibrator vibrate to coincidence, after equipping the body with each pad, where opposite arrangement is carried out with the part which should massage, the cosmetics instrument constituted so that the massage effectiveness might be made to do so to the range where the body is large is also proposed.

[0004]

[Problem(s) to be Solved by the Invention] When supersonic vibration is given succeeding the same part in the skin, the stimulus to the skin may be strong and inflammation may be produced on the skin. At this time, the above-mentioned problem is not produced from a pad always moving in the cosmetics instrument of a configuration of sliding the pad mentioned above to the front face of the skin.

[0005] However, in the cosmetics instrument of a configuration of equipping the body with some pads, where opposite arrangement is carried out with the part which should massage, since each pad is the configuration of always contacting the same part of the skin, too much stimulus may be given to the skin.

[0006] For this reason, although giving supersonic vibration intermittently by preparing an idle period in the supersonic vibration given to each pad is also considered, when this idle period is short, it is substantially [ as the case where supersonic vibration is given continuously ] equivalent, and when a long idle period is taken, the effectiveness of a massage worsens.

[0007] It is made in order that this invention may solve the above-mentioned technical problem, and it aims at offering the cosmetics instrument which can acquire the cosmetics effectiveness efficiently, without giving too much stimulus to the skin.

[0008]

[Means for Solving the Problem] Invention according to claim 1 is characterized by having the ultrasonic vibrator drive which makes two or more pads fixed to the supporter material and said supporter material of the shape of a belt with which it can equip, two or more ultrasonic vibrators respectively arranged in the interior of said two or more pads, and said two or more ultrasonic vibrators vibrate in order to the body.

[0009] Invention according to claim 2 is further equipped with the input section connected to said control section for changing the control section for changing the oscillating reinforcement of the supersonic vibration by said ultrasonic

vibrator in the shape of a wave, and the period and amplitude in a wave of this oscillating reinforcement in invention according to claim 1.

[0010] invention according to claim 3 -- claim 1 or claim 2 -- it has further the low frequency feeder style which supplies low frequency to either in order to said two or more pads in invention of a publication.

[0011]

[Embodiment of the Invention] Hereafter, the gestalt of implementation of this invention is explained based on a drawing. Drawing 1 is the top view omitting and showing some drawing cosmetics instruments concerning this invention.

[0012] This cosmetics instrument consists of a body 1 and a grip 2. A body 1 is the purpose which gives supersonic vibration and low frequency to the body, and is for making Pads 10a, 10b, 10c, 10d, 10e, 10f, 10g, 10h, 10i, and 10j contact the skin. On the other hand, in case a gripper 2 supplies low frequency to the body from Pads 10a, 10b, 10c, 10d, 10e, 10f, 10g, 10h, 10i, and 10j, it functions as a derivation way of low frequency, and is equipped with the conductive member 18 with which the periphery section of the cylindrical member 18 was equipped and which was connected with the ground through lead wire 19.

[0013] Said body 1 is equipped with the belt 11 made of cloth which functions as supporter material, and ten pads 10a, 10b, 10c, 10d, 10e, 10f, 10g, 10h, 10i, and 10j (hereafter, in naming these generically, it calls it "a pad 10") with which this belt 11 was equipped.

[0014] Drawing 2 is the fragmentary sectional view showing the configuration for fixing a pad 10 to a belt 11.

[0015] Where the heights 14 attached to the rear face are inserted in the crevice formed in the front face of the flexible support plate 12, it is equipped with each pad 10 on a support plate 12. And this support plate 12 is pinched with the belt 11 which consists of sheet-like objects of two front flesh sides, and is fixed. In this condition, the front face of each pad 10 consists of holes formed in the belt 11 so that it may project outside.

[0016] This pad 10 is manufactured by performing blasting etc. to this titanium, after carrying out press working of sheet metal of the titanium.

[0017] As shown in drawing 2, between each pad 10 and a support plate 12, the ultrasonic vibrators 13a, 13b, 13c, 13d, 13e, 13f, 13g, 13h, 13i, and 13j (hereafter, in naming these generically, it calls it "an ultrasonic vibrator 13") for giving supersonic vibration to each pad 10 are arranged. Among these ultrasonic vibrators 13a, 13b, 13c, 13d, 13e, 13f, 13g, 13h, 13i, and 13j, since a supersonic wave with a frequency of 3MHz is oscillated, ultrasonic vibrators 13a, 13c, 13e, 13g, and 13i are used. On the other hand, among these ultrasonic vibrators 13a, 13b, 13c, 13d, 13e, 13f, 13g, 13h, 13i, and 13j, since a supersonic wave with a frequency of 2MHz is oscillated, ultrasonic vibrators 13b, 13d, 13f, 13h, and 13j are used.

[0018] With reference to drawing 1, the ring member 16 is again arranged by the end of a belt 10. Moreover, the flat-surface fastener 15 is arranged by the other end of a belt 11. This flat-surface fastener 15 has composition which can be stopped on the front face of a belt 11. For this reason, after installing a body 1 so that a pad 10 may counter with the body, while winding the edge by the side of the flat-surface fastener 15 in a belt 11 around the ring member 16, it becomes possible by stopping the flat-surface fastener 15 on the front face of a belt 11 to equip the surroundings of the body with a body 1.

[0019] Drawing 3 is the block diagram showing the main electric configurations of the cosmetics instrument mentioned above.

[0020] This cosmetics instrument is equipped with the input section 31 connected to the controller 33 which functions as a control section for controlling the ultrasonic signal generator 32 which generates an ultrasonic signal, the low frequency signal generator 37 which generates a low frequency signal, and these ultrasonic signal generators 32 and the low frequency signal generator 37, and the controller 33 for adjusting the wave of the oscillating reinforcement of the supersonic vibration mentioned later.

[0021] Moreover, this cosmetics instrument is equipped with the FET switch 36, the ring counter 35 used in order to switch this FET switch 36, and the oscillator 34 which supplies the about 2.5 Hertz clock signal which shows the timing of a change-over to this ring counter 35. These FET switches 36, a ring counter 35, and an oscillator 34 function as the drive of an ultrasonic vibrator 13, and a feeder style of low frequency.

[0022] The ultrasonic signal generator 32 generates two kinds of ultrasonic signals, the frequency of 3MHz, and the frequency of 2MHz. A supersonic wave with a frequency of 3MHz reaches the FET switch 36 through wiring 43 and a switch 38, and is supplied to five ultrasonic vibrators 13a, 13c, 13e, 13g, and 13i through wiring 41 from this FET

switch 36. On the other hand, a supersonic wave with a frequency of 2MHz reaches the FET switch 36 through wiring 44 and a switch 39, and is supplied to five ultrasonic vibrators 13b, 13d, 13f, 13h, and 13j through wiring 41 from this FET switch 36.

[0023] The low frequency signal generator 37 generates 1 thru/or a low frequency signal with a frequency of about 50 Hertz. This low frequency signal is supplied to ten pads 10a, 10b, 10c, 10d, 10e, 10f, 10g, 10h, 10i, and 10j through wiring 42 from the FET switch 36.

[0024] In the cosmetics instrument which has the electric configuration shown in drawing 3, sequential connection of the ultrasonic generating section 32 and each ultrasonic vibrator 13 is made to the timing later mentioned according to an operation of a ring counter 35 and the FET switch 36, and each ultrasonic vibrator 13 carries out sequential vibration. At this time, when the ultrasonic generating section 32 and ultrasonic vibrators 13a, 13c, 13e, 13g, and 13i are connected, a switch 38 is closed, and a switch 39 is opened. On the other hand, when the ultrasonic generating section 32 and ultrasonic vibrators 13b, 13d, 13f, 13h, and 13j are connected, a switch 39 is closed, and a switch 38 is opened.

[0025] Moreover, sequential connection of the low frequency generating section 37 and each pad 10 is made to the timing later mentioned according to an operation of a ring counter 35 and the FET switch 36, and low frequency is supplied to each pad 10 one by one.

[0026] Drawing 4 is a timing diagram which shows the timing (namely, timing to which each ultrasonic vibrator 13 vibrates) by which supersonic vibration is given to each pad 10, and the timing by which low frequency is supplied to each pad 10.

[0027] As shown in this drawing, when each ultrasonic vibrator 13 vibrates in order, supersonic vibration is given to each pad 10 in order, and low frequency is supplied to each pad 10 in order.

[0028] That is, supersonic vibration is first given to pad 10a only for time amount t. Time amount t becomes 0.4 seconds when the frequency of the clock signal given to a ring counter 35 from an oscillator 34 is 2.5 Hertz. Then, while supersonic vibration is given to pad 10b only for time amount t, low frequency is supplied only for time amount t to it at pad 10a. Next, while supersonic vibration is given to pad 10c only for time amount t, low frequency is supplied only for time amount t to it at pad 10b. While supersonic vibration is given in this order by repeating such actuation to ten pads 10a, 10b, 10c, 10d, 10e, 10f, 10g, 10h, 10i, and 10j. Low frequency is supplied in this order to ten pads 10a, 10b, 10c, 10d, 10e, 10f, 10g, 10h, 10i, and 10j.

[0029] For this reason, even if each pad 10 and the skin are the configurations that it is always in contact, too much stimulus is not given to the skin. Moreover, the pad 10 of either of the ten pads 10 becomes possible [ performing a massage efficiently ] from supplying supersonic vibration or low frequency to the skin.

[0030] In addition, from each pad 10, the intermittent supersonic vibration from which the oscillating reinforcement changes in the shape of a wave is supplied to the skin. Drawing 5 is the explanatory view showing the wave of the oscillating reinforcement of supersonic vibration.

[0031] As shown in this drawing, from each ultrasonic vibrator 13, that oscillating reinforcement changes to each pad 10 in the shape of a wave, and the supersonic vibration of T is repeatedly given to it for continuation vibration periods. The wave of this oscillating reinforcement is controlled by the controller 33 shown in drawing 3.

[0032] And the period C and the amplitude A, and the continuation vibration periods T in the wave of oscillating reinforcement can be adjusted to any value by inputting a desired numeric value using the input section 31 connected to the controller 33. For this reason, it becomes possible to carry out massage activation efficiently according to the physique of those who receive the part which should massage, and a massage etc.

[0033] In addition, the above-mentioned continuation vibration periods T serve as for example, number Mississippi - dozens Mississippi, and are comparable as this. [ of an oscillating stop time ] For this reason, these continuation vibration periods T will be smaller than the vibration periods t of each ultrasonic vibrator 10 mentioned above (0.4 seconds) enough.

[0034] In the operation gestalt mentioned above, although supersonic vibration is given in order of pad 10a, pad 10b, pad 10c, pad 10d, pad 10e, pad 10f, pad 10g, pad 10h, pad 10i, and pad 10j You may make it give supersonic vibration in order of pad 10a, pad 10b, pad 10d, pad 10f, pad 10h, pad 10j, pad 10i, pad 10g, pad 10e, and pad 10c.

[0035] Moreover, you may make it give supersonic vibration at random using a random number etc. to ten pads 10a, 10b, 10c, 10d, 10e, 10f, 10g, 10h, 10i, and 10j.

[0036] Furthermore, in the operation gestalt mentioned above, although it has composition which gives supersonic

vibration in order to a single pad among ten pads 10a, 10b, 10c, 10d, 10e, 10f, 10g, 10h, 10i, and 10j, it is good for two or more pads 10 also as a configuration which gives supersonic vibration at coincidence. For example, only time amount  $t$  gives supersonic vibration to pad 10a, pad 10b, and pad 10c at first, then only time amount  $t$  gives supersonic vibration to pad 10d, pad 10e, and pad 10f, then only time amount  $t$  gives supersonic vibration to pad 10g, pad 10h, and pad 10i, and you may make it repeat the actuation which gives supersonic vibration to Pad j, pad 10a, and pad 10b after an appropriate time.

[0037]

[Effect of the Invention] According to invention according to claim 1, since two or more ultrasonic vibrators are made to vibrate in order, it becomes possible to acquire the cosmetics effectiveness efficiently, without giving too much stimulus to the skin.

[0038] According to invention according to claim 2, the oscillating reinforcement of the supersonic vibration by the ultrasonic vibrator is changed in the shape of a wave, and since the period and amplitude in a wave of this oscillating reinforcement can be changed, it becomes possible to carry out massage activation efficiently according to the physique of those who receive the part which should perform a massage, and a massage etc.

[0039] According to invention according to claim 3, since low frequency is supplied to two or more pads in order, in addition to the massage effectiveness by the supersonic wave, it becomes possible to also acquire the massage effectiveness by low frequency.

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**TECHNICAL FIELD**

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**[Field of the Invention]** This invention relates to the cosmetics instrument which makes the cosmetics effectiveness do so by giving supersonic vibration to the skin.

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PRIOR ART

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[Description of the Prior Art] What was equipped with the metal pad and the ultrasonic radiator which gives supersonic vibration to this pad as such a cosmetics instrument is known. And in this cosmetics instrument, by sliding a pad to the front face of the skin, the supersonic wave oscillated from an ultrasonic radiator is transmitted to the skin through a pad, and it is constituted by the metabolism promotion operation by the massage effectiveness, the deep part heat effect by the warm temperature energy effectiveness, etc. so that the cosmetics effectiveness may be made to do so.

[0003] Moreover, in order to perform the massage to the body automatically and efficiently in the cosmetics instrument using such a supersonic wave, the cosmetics instrument constituted so that the supporter material of the shape of a belt with which it can equip might be made to do the massage effectiveness so to the range where the body be large to the body by fix two or more pads which contained the ultrasonic vibrator in the interior respectively , and make each ultrasonic vibrator vibrate to coincidence after equip the body with each pad , where opposite arrangement be carry out with the part which should massage be also propose .

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## EFFECT OF THE INVENTION

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**[Effect of the Invention]** According to invention according to claim 1, since two or more ultrasonic vibrators are made to vibrate in order, it becomes possible to acquire the cosmetics effectiveness efficiently, without giving too much stimulus to the skin.

[0038] According to invention according to claim 2, the oscillating reinforcement of the supersonic vibration by the ultrasonic vibrator is changed in the shape of a wave, and since the period and amplitude in a wave of this oscillating reinforcement can be changed, it becomes possible to carry out massage activation efficiently according to the physique of those who receive the part which should perform a massage, and a massage etc.

[0039] According to invention according to claim 3, since low frequency is supplied to two or more pads in order, in addition to the massage effectiveness by the supersonic wave, it becomes possible to also acquire the massage effectiveness by low frequency.

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**TECHNICAL PROBLEM**

[Problem(s) to be Solved by the Invention] When supersonic vibration is given succeeding the same part in the skin, the stimulus to the skin may be strong and inflammation may be produced on the skin. At this time, the above-mentioned problem is not produced from a pad always moving in the cosmetics instrument of a configuration of sliding the pad mentioned above to the front face of the skin.

[0005] However, in the cosmetics instrument of a configuration of equipping the body with some pads, where opposite arrangement is carried out with the part which should massage, since each pad is the configuration of always contacting the same part of the skin, too much stimulus may be given to the skin.

[0006] For this reason, although giving supersonic vibration intermittently by preparing an idle period in the supersonic vibration given to each pad is also considered, when this idle period is short, it is substantially [ as the case where supersonic vibration is given continuously ] equivalent, and when a long idle period is taken, the effectiveness of a massage worsens.

[0007] It is made in order that this invention may solve the above-mentioned technical problem, and it aims at offering the cosmetics instrument which can acquire the cosmetics effectiveness efficiently, without giving too much stimulus to the skin.

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## MEANS

[Means for Solving the Problem] Invention according to claim 1 is characterized by having the ultrasonic vibrator drive which makes two or more pads fixed to the supporter material and said supporter material of the shape of a belt with which it can equip, two or more ultrasonic vibrators respectively arranged in the interior of said two or more pads, and said two or more ultrasonic vibrators vibrate in order to the body.

[0009] Invention according to claim 2 is further equipped with the input section connected to said control section for changing the control section for changing the oscillating reinforcement of the supersonic vibration by said ultrasonic vibrator in the shape of a wave, and the period and amplitude in a wave of this oscillating reinforcement in invention according to claim 1.

[0010] invention according to claim 3 -- claim 1 or claim 2 -- it has further the low frequency feeder style which supplies low frequency to either in order to said two or more pads in invention of a publication.

[0011]

[Embodiment of the Invention] Hereafter, the gestalt of implementation of this invention is explained based on a drawing. Drawing 1 is the top view omitting and showing some drawing cosmetics instruments concerning this invention.

[0012] This cosmetics instrument consists of a body 1 and a grip 2. A body 1 is the purpose which gives supersonic vibration and low frequency to the body, and is for making Pads 10a, 10b, 10c, 10d, 10e, 10f, 10g, 10h, 10i, and 10j contact the skin. On the other hand, in case a gripper 2 supplies low frequency to the body from Pads 10a, 10b, 10c, 10d, 10e, 10f, 10g, 10h, 10i, and 10j, it functions as a derivation way of low frequency, and is equipped with the conductive member 18 with which the periphery section of the cylindrical member 18 was equipped and which was connected with the ground through lead wire 19.

[0013] Said body 1 is equipped with the belt 11 made of cloth which functions as supporter material, and ten pads 10a, 10b, 10c, 10d, 10e, 10f, 10g, 10h, 10i, and 10j (hereafter, in naming these generically, it calls it "a pad 10") with which this belt 11 was equipped.

[0014] Drawing 2 is the fragmentary sectional view showing the configuration for fixing a pad 10 to a belt 11.

[0015] Where the heights 14 attached to the rear face are inserted in the crevice formed in the front face of the flexible support plate 12, it is equipped with each pad 10 on a support plate 12. And this support plate 12 is pinched with the belt 11 which consists of sheet-like objects of two front flesh sides, and is fixed. In this condition, the front face of each pad 10 consists of holes formed in the belt 11 so that it may project outside.

[0016] This pad 10 is manufactured by performing blasting etc. to this titanium, after carrying out press working of sheet metal of the titanium.

[0017] As shown in drawing 2, between each pad 10 and a support plate 12, the ultrasonic vibrators 13a, 13b, 13c, 13d, 13e, 13f, 13g, 13h, 13i, and 13j (hereafter, in naming these generically, it calls it "an ultrasonic vibrator 13") for giving supersonic vibration to each pad 10 are arranged. Among these ultrasonic vibrators 13a, 13b, 13c, 13d, 13e, 13f, 13g, 13h, 13i, and 13j, since a supersonic wave with a frequency of 3MHz is oscillated, ultrasonic vibrators 13a, 13c, 13e, 13g, and 13i are used. On the other hand, among these ultrasonic vibrators 13a, 13b, 13c, 13d, 13e, 13f, 13g, 13h, 13i, and 13j, since a supersonic wave with a frequency of 2MHz is oscillated, ultrasonic vibrators 13b, 13d, 13f, 13h, and 13j are used.

[0018] With reference to drawing 1, the ring member 16 is again arranged by the end of a belt 10. Moreover, the flat-surface fastener 15 is arranged by the other end of a belt 11. This flat-surface fastener 15 has composition which can

be stopped on the front face of a belt 11. For this reason, after installing a body 1 so that a pad 10 may counter with the body, while winding the edge by the side of the flat-surface fastener 15 in a belt 11 around the ring member 16, it becomes possible by stopping the flat-surface fastener 15 on the front face of a belt 11 to equip the surroundings of the body with a body 1.

[0019] Drawing 3 is the block diagram showing the main electric configurations of the cosmetics instrument mentioned above.

[0020] This cosmetics instrument is equipped with the input section 31 connected to the controller 33 which functions as a control section for controlling the ultrasonic signal generator 32 which generates an ultrasonic signal, the low frequency signal generator 37 which generates a low frequency signal, and these ultrasonic signal generators 32 and the low frequency signal generator 37, and the controller 33 for adjusting the wave of the oscillating reinforcement of the supersonic vibration mentioned later.

[0021] Moreover, this cosmetics instrument is equipped with the FET switch 36, the ring counter 35 used in order to switch this FET switch 36, and the oscillator 34 which supplies the about 2.5 Hertz clock signal which shows the timing of a change-over to this ring counter 35. These FET switches 36, a ring counter 35, and an oscillator 34 function as the drive of an ultrasonic vibrator 13, and a feeder style of low frequency.

[0022] The ultrasonic signal generator 32 generates two kinds of ultrasonic signals, the frequency of 3MHz, and the frequency of 2MHz. A supersonic wave with a frequency of 3MHz reaches the FET switch 36 through wiring 43 and a switch 38, and is supplied to five ultrasonic vibrators 13a, 13c, 13e, 13g, and 13i through wiring 41 from this FET switch 36. On the other hand, a supersonic wave with a frequency of 2MHz reaches the FET switch 36 through wiring 44 and a switch 39, and is supplied to five ultrasonic vibrators 13b, 13d, 13f, 13h, and 13j through wiring 41 from this FET switch 36.

[0023] The low frequency signal generator 37 generates 1 thru/or a low frequency signal with a frequency of about 50 Hertz. This low frequency signal is supplied to ten pads 10a, 10b, 10c, 10d, 10e, 10f, 10g, 10h, 10i, and 10j through wiring 42 from the FET switch 36.

[0024] In the cosmetics instrument which has the electric configuration shown in drawing 3, sequential connection of the ultrasonic generating section 32 and each ultrasonic vibrator 13 is made to the timing later mentioned according to an operation of a ring counter 35 and the FET switch 36, and each ultrasonic vibrator 13 carries out sequential vibration. At this time, when the ultrasonic generating section 32 and ultrasonic vibrators 13a, 13c, 13e, 13g, and 13i are connected, a switch 38 is closed, and a switch 39 is opened. On the other hand, when the ultrasonic generating section 32 and ultrasonic vibrators 13b, 13d, 13f, 13h, and 13j are connected, a switch 39 is closed, and a switch 38 is opened.

[0025] Moreover, sequential connection of the low frequency generating section 37 and each pad 10 is made to the timing later mentioned according to an operation of a ring counter 35 and the FET switch 36, and low frequency is supplied to each pad 10 one by one.

[0026] Drawing 4 is a timing diagram which shows the timing (namely, timing to which each ultrasonic vibrator 13 vibrates) by which supersonic vibration is given to each pad 10, and the timing by which low frequency is supplied to each pad 10.

[0027] As shown in this drawing, when each ultrasonic vibrator 13 vibrates in order, supersonic vibration is given to each pad 10 in order, and low frequency is supplied to each pad 10 in order.

[0028] That is, supersonic vibration is first given to pad 10a only for time amount t. Time amount t becomes 0.4 seconds when the frequency of the clock signal given to a ring counter 35 from an oscillator 34 is 2.5 Hertz. Then, while supersonic vibration is given to pad 10b only for time amount t, low frequency is supplied only for time amount t to it at pad 10a. Next, while supersonic vibration is given to pad 10c only for time amount t, low frequency is supplied only for time amount t to it at pad 10b. While supersonic vibration is given in this order by repeating such actuation to ten pads 10a, 10b, 10c, 10d, 10e, 10f, 10g, 10h, 10i, and 10j. Low frequency is supplied in this order to ten pads 10a, 10b, 10c, 10d, 10e, 10f, 10g, 10h, 10i, and 10j.

[0029] For this reason, even if each pad 10 and the skin are the configurations that it is always in contact, too much stimulus is not given to the skin. Moreover, the pad 10 of either of the ten pads 10 becomes possible [ performing a massage efficiently ] from supplying supersonic vibration or low frequency to the skin.

[0030] In addition, from each pad 10, the intermittent supersonic vibration from which the oscillating reinforcement changes in the shape of a wave is supplied to the skin. Drawing 5 is the explanatory view showing the wave of the

oscillating reinforcement of supersonic vibration.

[0031] As shown in this drawing, from each ultrasonic vibrator 13, that oscillating reinforcement changes to each pad 10 in the shape of a wave, and the supersonic vibration of T is repeatedly given to it for continuation vibration periods. The wave of this oscillating reinforcement is controlled by the controller 33 shown in drawing 3.

[0032] And the period C and the amplitude A, and the continuation vibration periods T in the wave of oscillating reinforcement can be adjusted to any value by inputting a desired numeric value using the input section 31 connected to the controller 33. For this reason, it becomes possible to carry out massage activation efficiently according to the physique of those who receive the part which should massage, and a massage etc.

[0033] In addition, the above-mentioned continuation vibration periods T serve as for example, number Mississippi - dozens Mississippi, and are comparable as this. [ of an oscillating stop time ] For this reason, these continuation vibration periods T will be smaller than the vibration periods t of each ultrasonic vibrator 10 mentioned above (0.4 seconds) enough.

[0034] In the operation gestalt mentioned above, although supersonic vibration is given in order of pad 10a, pad 10b, pad 10c, pad 10d, pad 10e, pad 10f, pad 10g, pad 10h, pad 10i, and pad 10j You may make it give supersonic vibration in order of pad 10a, pad 10b, pad 10d, pad 10f, pad 10h, pad 10j, pad 10i, pad 10g, pad 10e, and pad 10c.

[0035] Moreover, you may make it give supersonic vibration at random using a random number etc. to ten pads 10a, 10b, 10c, 10d, 10e, 10f, 10g, 10h, 10i, and 10j.

[0036] Furthermore, in the operation gestalt mentioned above, although it has composition which gives supersonic vibration in order to a single pad among ten pads 10a, 10b, 10c, 10d, 10e, 10f, 10g, 10h, 10i, and 10j, it is good for two or more pads 10 also as a configuration which gives supersonic vibration at coincidence. For example, only time amount t gives supersonic vibration to pad 10a, pad 10b, and pad 10c at first, then only time amount t gives supersonic vibration to pad 10d, pad 10e, and pad 10f, then only time amount t gives supersonic vibration to pad 10g, pad 10h, and pad 10i, and you may make it repeat the actuation which gives supersonic vibration to Pad j, pad 10a, and pad 10b after an appropriate time.

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## DESCRIPTION OF DRAWINGS

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### [Brief Description of the Drawings]

[Drawing 1] It is the top view omitting and showing some drawing cosmetics instruments concerning this invention.

[Drawing 2] It is the fragmentary sectional view showing the configuration for equipping a belt 11 with a pad 10.

[Drawing 3] It is the block diagram showing the main electric configurations of the cosmetics instrument concerning this invention.

[Drawing 4] It is the timing diagram which shows the timing by which supersonic vibration is given to each pad 10, and the timing by which low frequency is supplied to each pad 10.

[Drawing 5] It is the explanatory view showing the wave of the oscillating reinforcement of supersonic vibration.

### [Description of Notations]

1 Body

2 Grip

10 Pad

11 Belt

12 Support Plate

13 Ultrasonic Vibrator

15 Flat-Surface Fastener

16 Ring Member

18 Conductive Member

31 Input Section

32 Ultrasonic Signal Generator

33 Controller

34 Oscillator

35 Ring Counter

36 FET Switch

37 Low Frequency Signal Generator

38 Switch

39 Switch

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[Translation done.]

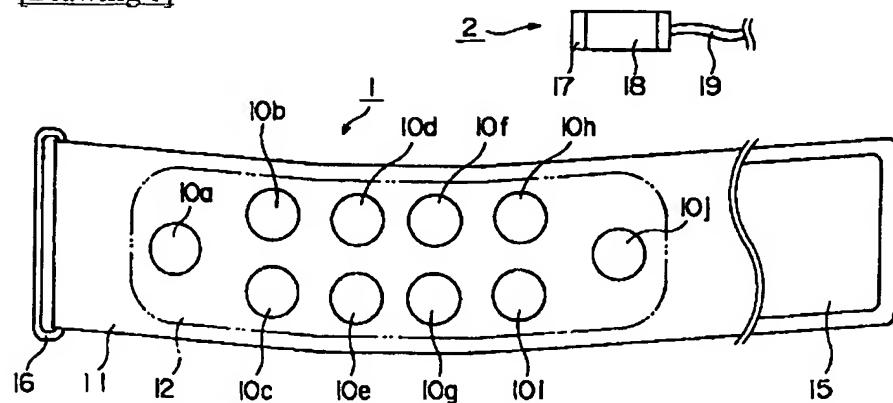
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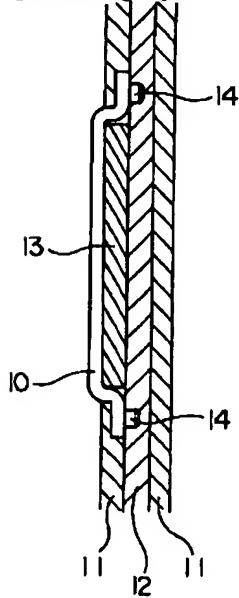
1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

## DRAWINGS

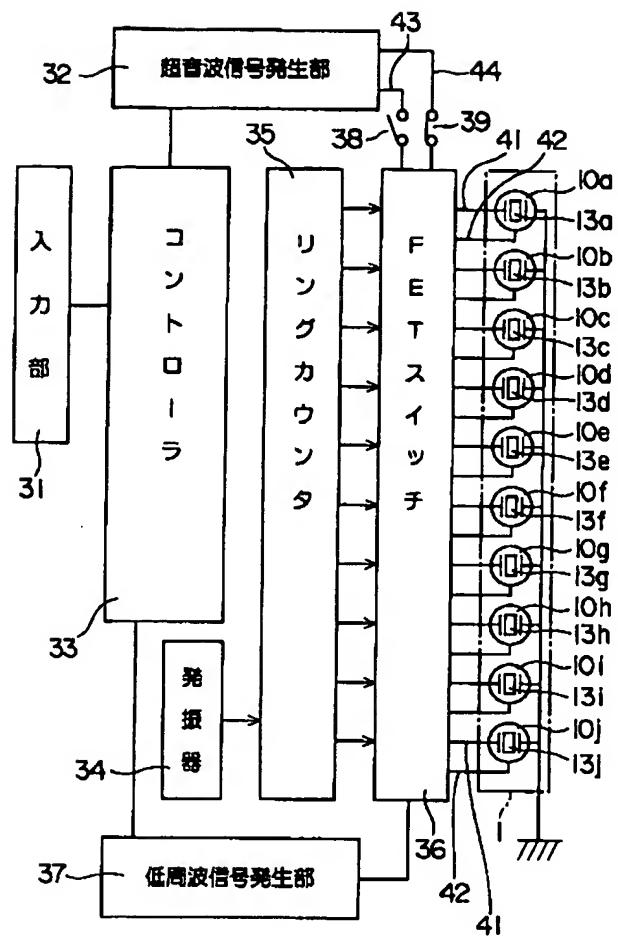
### [Drawing 1]



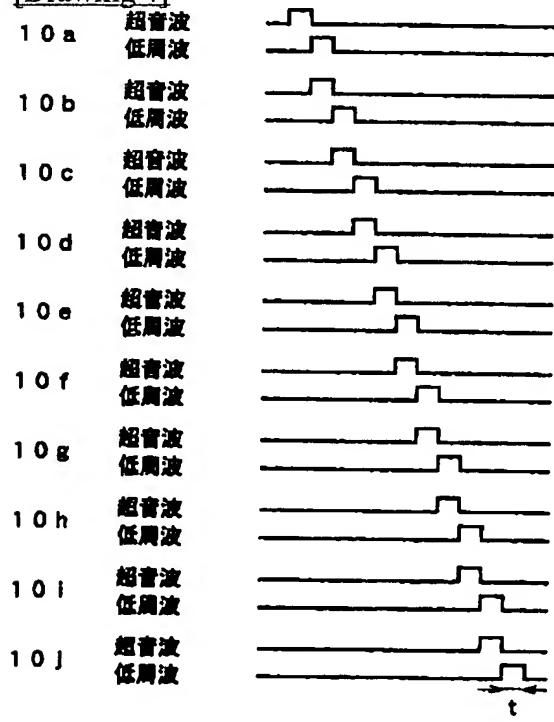
### [Drawing 2]



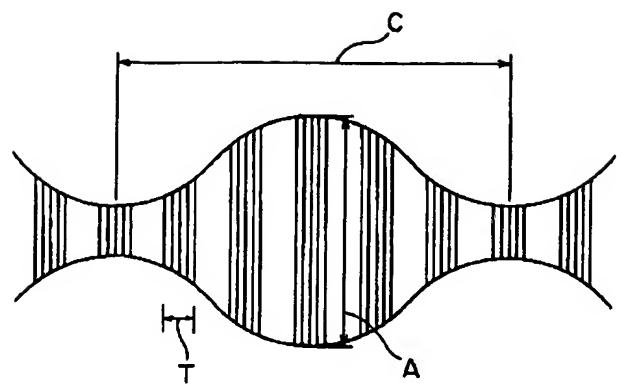
[Drawing 3]



[Drawing 4]



[Drawing 5]



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[Translation done.]

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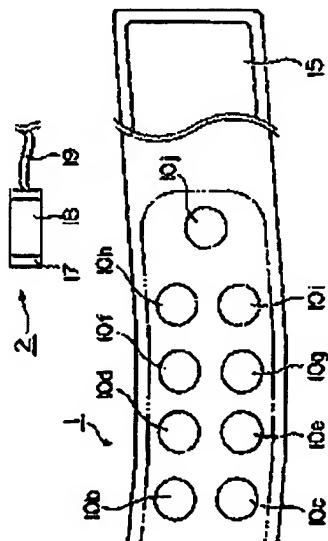
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FF01 FF09 GG01 GG11 HH08  
4C101 B401 B402 B807 B812 BC27  
B007 BD12 BE06 E802

(54)【発明の名称】 美容器具

## (57)【要約】

【課題】 皮膚に対して過度の刺激を付与することなく効率的に美容効果を得ることが可能な美容器具を提供することを目的とする。

【解決手段】 美容器具の本体1は、支持部材として機能する布製のベルト11と、このベルト11に縫着されその内部に各々超音波振動子が配設された10個のパッド10a、10b、10c、10d、10e、10f、10g、10h、10i、10jとを備える。各超音波振動子13が順番に振動することにより各パッド10a、10b、10c、10d、10e、10f、10g、10h、10i、10jには順番に超音波振動が付与される。また、各パッド10a、10b、10c、10d、10e、10f、10g、10h、10i、10jには順番に低周波が供給される。



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## 【特許請求の範囲】

【請求項1】 身体に対して装着可能なベルト状の支持部材と、前記支持部材に固定された複数個のパッドと、前記複数個のパッドの内部に各々配設された複数個の超音波振動子と、前記複数個の超音波振動子を順番に振動せしめる超音波振動子駆動機構と、を備えたことを特徴とする美容器具。

【請求項2】 請求項1に記載の美容器具において、前記超音波振動子による超音波振動の振動強度を波形状に変化させるための制御部と、この振動強度の波形における周期と振幅とを変更するための前記制御部に接続された入力部とをさらに備える美容器具。

【請求項3】 請求項1または請求項2いずれかに記載の美容器具において、前記複数個のパッドに対し、順番に低周波を供給する低周波供給機構をさらに備える美容器具。

## 【発明の詳細な説明】

【0001】

【発明の属する技術分野】この発明は、皮膚に対して超音波振動を付与することにより美容効果を奏せしめる美容器具に関する。

【0002】

【従来の技術】このような美容器具としては、金属製のパッドと、このパッドに超音波振動を付与する超音波発振子とを備えたものが知られている。そして、この美容器具においては、パッドを皮膚の表面に対して摺動させることにより、超音波発振子から発振される超音波をパッドを介して皮膚に伝達し、マッサージ効果による新陳代謝促進作用や温熱エネルギー効果による深部温熱作用等により、美容効果を奏せしめるように構成されている。

【0003】また、このような超音波を利用した美容器具において、身体に対するマッサージを自動的かつ効率的に実行するため、身体に対して装着可能なベルト状の支持部材に、その内部に各々超音波振動子を内蔵した複数個のパッドを固定し、各パッドをマッサージを行うべき部位と対向配置した状態で身体に装着した上で各超音波振動子を同時に振動せしめることにより、身体の広い範囲に対してマッサージ効果を奏せしめるように構成された美容器具も提案されている。

【0004】

【発明が解決しようとする課題】皮膚における同一箇所に連続して超音波振動を付与した場合には、皮膚に対する

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を行うべき部位と対向配置した状態で身体に装着する構成の美容器具においては、各パッドが皮膚の同一箇所に常に接触する構成であることから、皮膚に過度の刺激が付与される可能性がある。

【0006】このため、各パッドに付与する超音波振動に休止期間を設けることにより間欠的に超音波振動を付与することも考えられるが、この休止期間が短い場合には連続して超音波振動を付与する場合と実質的に同等であり、また、休止期間を長くとった場合にはマッサージの効率が悪くなる。

【0007】この発明は上記課題を解決するためになされたものであり、皮膚に対して過度の刺激を付与することなく効率的に美容効果を得ることが可能な美容器具を提供することを目的とする。

【0008】

【課題を解決するための手段】請求項1に記載の発明は、身体に対して装着可能なベルト状の支持部材と、前記支持部材に固定された複数個のパッドと、前記複数個のパッドの内部に各々配設された複数個の超音波振動子と、前記複数個の超音波振動子を順番に振動せしめる超音波振動子駆動機構と、を備えたことを特徴とする。

【0009】請求項2に記載の発明は、請求項1に記載の発明において、前記超音波振動子による超音波振動の振動強度を波形状に変化させるための制御部と、この振動強度の波形における周期と振幅とを変更するための前記制御部に接続された入力部とをさらに備えている。

【0010】請求項3に記載の発明は、請求項1または請求項2いずれかに記載の発明において、前記複数個のパッドに対し、順番に低周波を供給する低周波供給機構をさらに備えている。

【0011】

【発明の実施の形態】以下、この発明の実施の形態を図面に基づいて説明する。図1はこの発明に係る図美容器具の一部を省略して示す平面図である。

【0012】この美容器具は、本体1とグリップ2から構成される。本体1は、超音波振動および低周波を身体に付与する目的で、パッド10a、10b、10c、10d、10e、10f、10g、10h、10i、10jを皮膚に当接させるためのものである。一方、グリップ2は、パッド10a、10b、10c、10d、10e、10f、10g、10h、10i、10jから身体に低周波を供給する際に、低周波の導出路として機能するものであり、円筒状部材18の外周部に装着されアースと導線19を介して接続された導電性部材18を備える。

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る。

【0014】図2は、パッド10をベルト11に固定するための構成を示す部分断面図である。

【0015】各パッド10は、その裏面に付設された凸部14を可搬性の支持板12の表面に形成された凹部に挿入した状態で支持板12上に装着される。そして、この支持板12は、表裏二枚のシート状体から構成されるベルト11により挟持され、固定される。この状態においては、各パッド10の表面は、ベルト11に形成された穴部から、外部に突出するよう構成されている。

【0016】このパッド10は、例えば、チタンをプレス加工した後、このチタンにプラスチック等を塗すことにより製造される。

【0017】図2に示すように、各パッド10と支持板12との間には、各パッド10に超音波振動を付与するための超音波振動子13a、13b、13c、13d、13e、13f、13g、13h、13i、13j（以下、これらを総称する場合には「超音波振動子13」という）が配設されている。これらの超音波振動子13a、13b、13c、13d、13e、13f、13g、13h、13i、13jのうち、超音波振動子13a、13c、13e、13g、13iは3メガヘルツの周波数の超音波を発振するために使用される。一方、これらの超音波振動子13a、13b、13c、13d、13e、13f、13g、13h、13i、13jのうち超音波振動子13b、13d、13f、13h、13jは、2メガヘルツの周波数の超音波を発振するために使用される。

【0018】再度図1を参照して、ベルト10の一端には、リング部材16が配設されている。また、ベルト11の他端部には、平面ファスナー15が配設されている。この平面ファスナー15は、ベルト11の表面に停止可能な構成となっている。このため、本体1をパッド10が身体と対向するように設置した後、ベルト11における平面ファスナー15側の端部をリング部材16に巻回するとともに、平面ファスナー15をベルト11の表面に停止することにより、本体1を身体の周りに装着することが可能となる。

【0019】図3は、上述した美容器具の主要な電気的構成を示すブロック図である。

【0020】この美容器具は、超音波信号を発生する超音波信号発生部32と、低周波信号を発生する低周波信号発生部37と、これらの超音波信号発生部32および低周波信号発生部37を制御するための制御部として機能するコントローラ33と、後述する超音波振動子の振動

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に対し切換のタイミングを示す2.5ヘルツ程度のクロック信号を供給する発振器34とを備える。これらのFETスイッチ36と、リングカウンタ35と、発振器34とは、超音波振動子13の駆動機構および低周波の供給機構として機能する。

【0022】超音波信号発生部32は、3メガヘルツの周波数と2メガヘルツの周波数の二種類の超音波信号を発生する。3メガヘルツの周波数の超音波は、配線43およびスイッチ38を介してFETスイッチ36に到達し、このFETスイッチ36から配線41を介して5個の超音波振動子13a、13c、13e、13g、13iに供給される。一方、2メガヘルツの周波数の超音波は、配線44およびスイッチ39を介してFETスイッチ36に到達し、このFETスイッチ36から配線41を介して5個の超音波振動子13b、13d、13f、13h、13jに供給される。

【0023】低周波信号発生部37は、1乃至50ヘルツ程度の周波数の低周波信号を発生する。この低周波信号は、FETスイッチ36から配線42を介して10個のパッド10a、10b、10c、10d、10e、10f、10g、10h、10i、10jに供給される。

【0024】図3に示す電気的構成を有する美容器具においては、超音波発生部32と各超音波振動子13とが、リングカウンタ35およびFETスイッチ36の作用により後述するタイミングで順次接続され、各超音波振動子13が順次振動する。このとき、超音波発生部32と超音波振動子13a、13c、13e、13g、13iとが接続されているときにはスイッチ38が閉じられ、スイッチ39が開かれる。一方、超音波発生部32と超音波振動子13b、13d、13f、13h、13jとが接続されているときにはスイッチ39が閉じられ、スイッチ38が開かれる。

【0025】また、低周波発生部37と各パッド10とが、リングカウンタ35およびFETスイッチ36の作用により後述するタイミングで順次接続され、各パッド10に順次低周波が供給される。

【0026】図4は、各パッド10に超音波振動子が付与されるタイミング（すなわち、各超音波振動子13が振動するタイミング）と、各パッド10に低周波が供給されるタイミングとを示すタイムチャートである。

【0027】この図に示すように、各超音波振動子13が順番に振動することにより各パッド10には順番に超音波振動子が付与され、また、各パッド10には順番に低周波が供給される。

【0028】すなわち、先ずパッド10aに時間もだけ

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バッド10cに時間tだけ超音波振動が付与されるとともにバッド10bに時間tだけ低周波が供給される。このような動作を繰り返すことにより、10個のバッド10a、10b、10c、10d、10e、10f、10g、10h、10i、10jに対してこの順で超音波振動が付与されるとともに、10個のバッド10a、10b、10c、10d、10e、10f、10g、10h、10i、10jに対してこの順で低周波が供給される。

【0029】このため、各バッド10と皮膚とが常時接触している構成であっても、皮膚に過度の刺激が付与されることはない。また、10個のバッド10のうちのいずれかのバッド10が皮膚に超音波振動または低周波を供給していることから、効率よくマッサージを実行することが可能となる。

【0030】なお、各バッド10からは、その振動強度が波形状に変化する間欠的な超音波振動が皮膚に供給されるようになっている。図5は、超音波振動の振動強度の波形を示す説明図である。

【0031】この図に示すように、各バッド10には、各超音波振動子13から、その振動強度が波形状に変化し連続振動時間がTの超音波振動が繰り返して付与される。この振動強度の波形は、図3に示すコントローラ33により制御される。

【0032】そして、コントローラ33に接続された入力部31を使用して所望の数値を入力することにより、振動強度の波形における周期Cおよび振幅Aと、連続振動時間Tとを任意の値に調整することができる。このため、マッサージを行うべき部位やマッサージを受ける者の体格等に応じて効率的にマッサージ実行することが可能となる。

【0033】なお、上記連続振動時間Tは、例えば、数ミリセコンド～数十ミリセコンドとなっており、振動停止時間もこれと同程度となっている。このため、この連続振動時間Tは上述した各超音波振動子10の振動時間t(0.4秒)より十分小さいことになる。

【0034】上述した実施形態においては、バッド10a、バッド10b、バッド10c、バッド10d、バッド10e、バッド10f、バッド10g、バッド10h、バッド10i、バッド10jの順に超音波振動を付与しているが、バッド10a、バッド10b、バッド10d、バッド10f、バッド10h、バッド10j、バッド10i、バッド10g、バッド10e、バッド10cの順に超音波振動を付与するようにしてもよい。

【0035】また、10個のバッド10a、10b、1

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e、10f、10g、10h、10i、10jのうち單一のバッドに順番に超音波振動を付与する構成となっているが、複数個のバッド10に同時に超音波振動を付与する構成としてもよい。例えば、最初はバッド10a、バッド10b、バッド10cに時間tだけ超音波振動を付与し、次にバッド10d、バッド10e、バッド10fに時間tだけ超音波振動を付与し、次にバッド10g、バッド10h、バッド10iに時間tだけ超音波振動を付与し、かかる後、バッドj、バッド10a、バッド10iに超音波振動を付与する動作を繰り返すようにしてもよい。

【0037】

【発明の効果】 請求項1に記載の発明によれば、複数個の超音波振動子を順番に振動せしめることから、皮膚に対して過度の刺激を付与することなく効率的に美容効果を得ることが可能となる。

【0038】 請求項2に記載の発明によれば、超音波振動子による超音波振動の振動強度を波形状に変化させ、この振動強度の波形における周期と振幅とを変更することができるから、マッサージを行うべき部位やマッサージを受ける者の体格等に応じて効率的にマッサージ実行することが可能となる。

【0039】 請求項3に記載の発明によれば、複数個のバッドに順番に低周波を供給することから、超音波によるマッサージ効果に加えて、低周波によるマッサージ効果を得ることが可能となる。

【図面の簡単な説明】

【図1】この発明に係る美容器具の一部を省略して示す平面図である。

【図2】バッド10をベルト11に装着するための構成を示す部分断面図である。

【図3】この発明に係る美容器具の主要な構成を示すブロック図である。

【図4】各バッド10に超音波振動が付与されるタイミングと、各バッド10に低周波が供給されるタイミングとを示すタイムチャートである。

【図5】超音波振動の振動強度の波形を示す説明図である。

【符号の説明】

1	本体
2	クリップ
10	バッド
11	ベルト
12	支持板
13	超音波振動子

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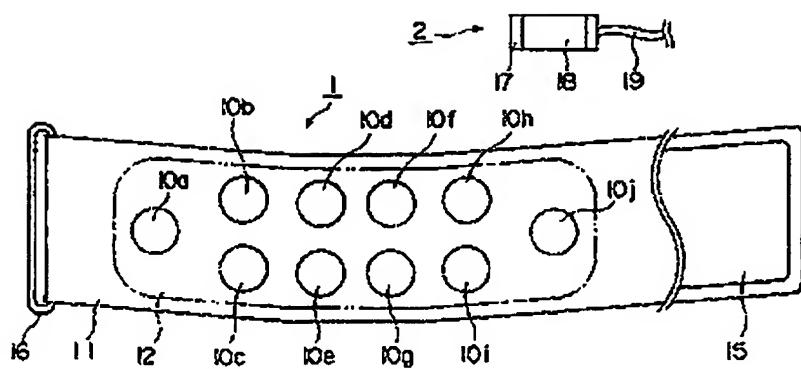
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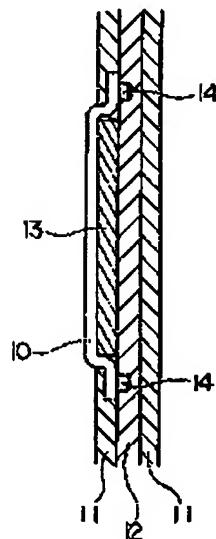
33 コントローラ  
 34 発振器  
 35 リングカウンタ  
 36 FETスイッチ

\* 37 低周波信号発生部  
 38 スイッチ  
 39 スイッチ  
 \*

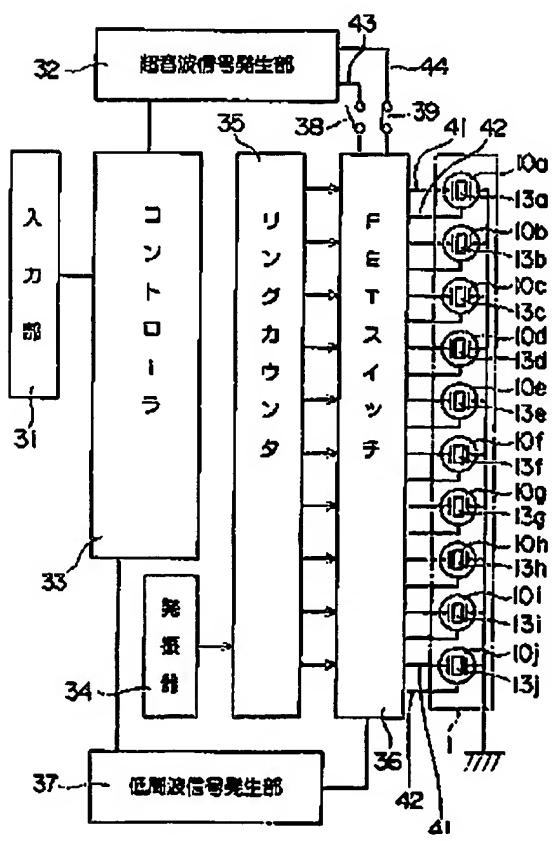
【図1】



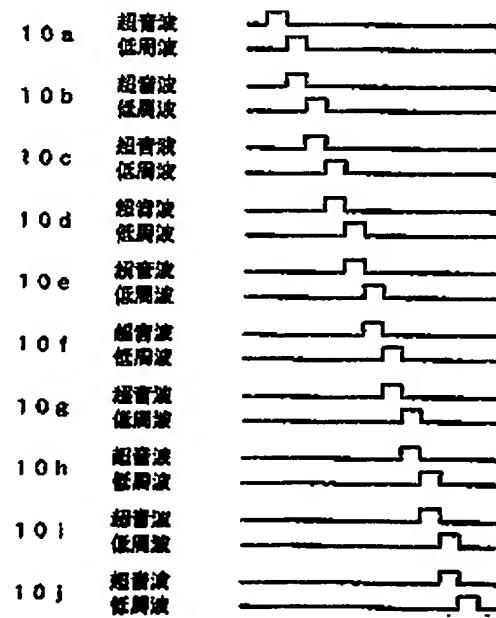
【図2】



【図3】



【図4】



(6)

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【図6】

